CLAIMS

1. A water-soluble fullerene wherein the fullerene has a functional group in the molecule and a water-soluble polymer is linked through the functional group.

2. The water-soluble fullerene according to claim 1 having 1 to 5 functional groups.

3. The water-soluble fullerene according to claim 1 or 2 having one functional group.

4. The water-soluble fullerene according to any of claims 1 to 3 wherein the functional group is a carboxyl group.

5. The water-soluble fullerene according to any of claims 1 to 4 wherein the fullerene is C_{60} fullerene.

6. The water-soluble fullerene according to any of claims 1 to 5 wherein molecular weight of the water-soluble polymer is 1,000 to 1,000,000.

7. The water-soluble fullerene according to any of claims 1 to 6 wherein the water-soluble polymer is a water-soluble polymer selected from nonionic water-soluble synthetic polymers, nonionic or ionic polysaccharides, modified substances thereof, copolymer or composite of two or three ingredients of these water-soluble polymers, hyaluronic acid, chitosan and chitinous derivatives.

8. The water-soluble fullerene according to any of claims 1 to 7 wherein the water-soluble polymer is a water-soluble polymer having an inactive group at one

end and a reactive group which reacts with a functional group of a fullerene at the other end.

9. The water-soluble fullerene according to claim 8 wherein the water-soluble polymer is a polyethylene glycol having an inactive group at one end and a reactive group which reacts with a functional group of a fullerene at the other end and having a molecular weight of 4000 to 15000.

10. The water-soluble fullerene according to claim 9 wherein the water-soluble polymer is a polyethylene glycol having a C1-C6 alkyl group at one end and a C1-6 alkyl group substituted with an amino group at the other end and having a molecular weight of 4000 to 15000.

11. The water-soluble fullerene according to claim 8 wherein the water-soluble polymer is a composite of a polyethylene glycol, having an inactive group at one end and having a molecular weight of 4000 to 15000, and a compound having a reactive group which reacts with a functional group of a fullerene.

12. The water-soluble fullerene according to claim 11 wherein the water-soluble polymer is a reaction product of a polyethylene glycol, having a C1-C6 alkyl group at one end and a C1-6 alkyl group substituted with an amino group at the other end, and an amino acid.

13. The water-soluble fullerene according to any of claims 1 to 12 wherein the water-soluble fullerene

is in a form of aggregate.

14. The water-soluble fullerene according to claim 13 wherein the aggregate has a size of 20 to 400 nm.

15. The water-soluble fullerene according to any of claims 1 to 14 wherein the water-soluble fullerene or the aggregate thereof is in a form of an aqueous solution.

16. A process for producing a water-soluble fullerene characterized by reacting a water-soluble polymer with a functional group of the fullerene having the functional group in the molecule.

17. The process for producing a water-soluble fullerene according to claim 16 wherein the water-soluble polymer is any water-soluble polymer of claims 6 to 12.

18. The process for producing a water-soluble fullerene according to claim 16 or 17 wherein the functional group of a fullerene is one carboxyl group.

19. An active oxygen generator which contains a water-soluble fullerene in any of claims 1 to 15 or a water-soluble fullerene produced by a process for producing in any of claims 16 to 18.

20. The active oxygen generator according to claim 19 to be used for photodynamic therapy or sonodynamic therapy.

21. The active oxygen generator according to claim 19 for inhibiting cell proliferation.

22. The active oxygen generator according to claim 21 wherein the cell is a cancer cell.

23. The active oxygen generator according to any of claims 19 to 22 for use in treating cancer.